

Merritt Parkway: Pequonnock River Bridge  
Spanning Pequonnock River on the Merritt Parkway  
Trumbull  
Fairfield County  
Connecticut

HAER No. CT-57

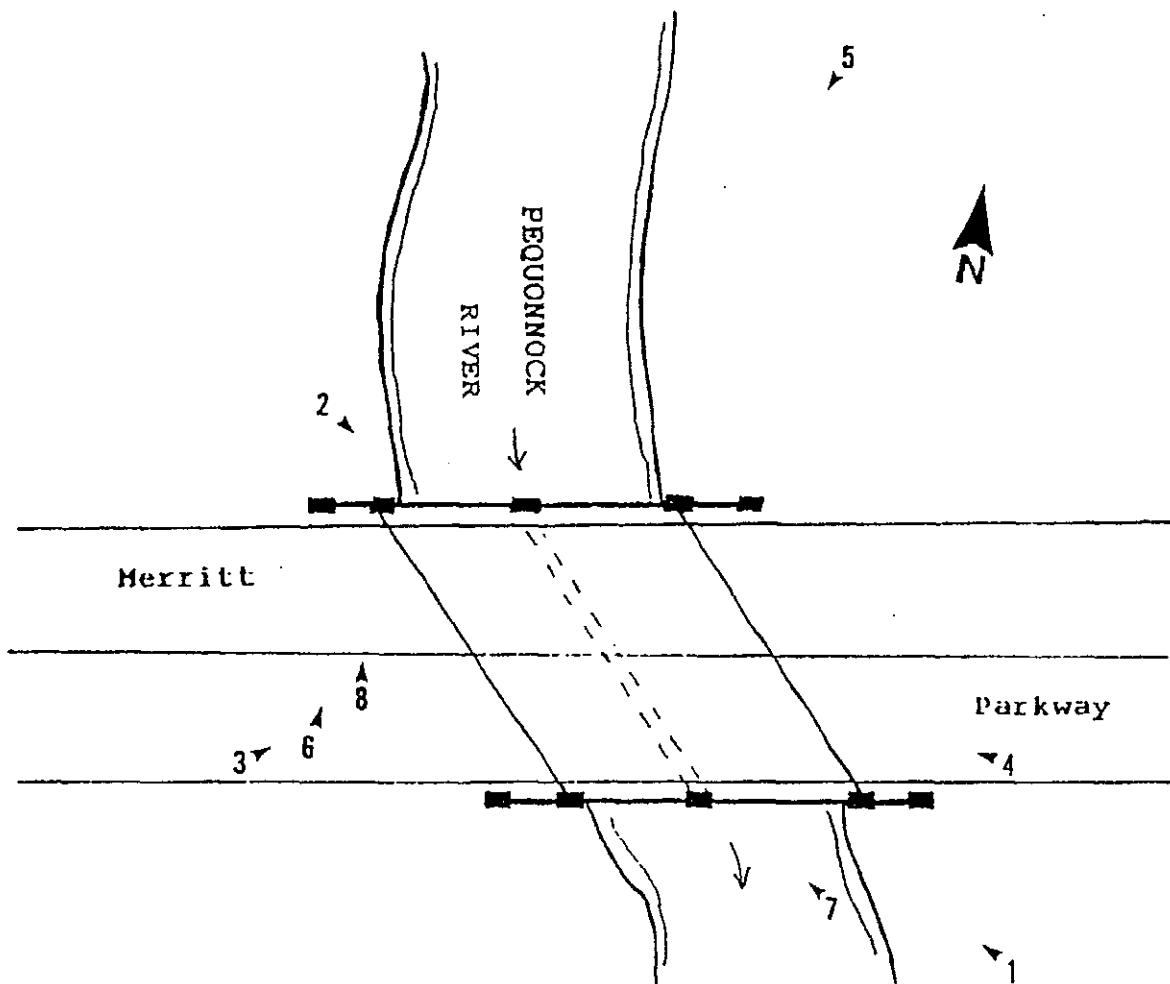
HAER  
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PHOTOGRAPHS

WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record  
National Park Service  
U.S. Department of the Interior  
P.O. Box 37127  
Washington, D.C. 20013-7127

Key to Photographs  
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MERRITT PARKWAY:  
PEQUONNOCK RIVER BRIDGE

Trumbull

Fairfield County, CT

0 50 feet

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(PART)

# HISTORIC AMERICAN ENGINEERING RECORD

MERRITT PARKWAY: PEQUONNOCK RIVER BRIDGE      HAER No. CT-57

Location:                      Merritt Parkway over Pequonnock  
                                 River  
                                 Trumbull  
                                 Fairfield County, Connecticut

UTM: 18.651980.4566350  
Quad: Bridgeport, CT, 1:24000

Date of Construction:      1935

Engineer:                      Connecticut State Highway  
                                 Department

Present Owner:              State of Connecticut  
                                 Department of Transportation  
                                 Wethersfield, Connecticut 06109

Present Use:                  Vehicular bridge

Significance:                  Pequonnock River Bridge is a  
                                 component of the Merritt  
                                 Parkway, a landscaped limited-  
                                 access highway designed and  
                                 built in the 1930s. The  
                                 parkway was regarded as a model  
                                 in its day, in large part  
                                 because of the architectural  
                                 qualities of its more than 60  
                                 bridges. As a span that  
                                 carries the parkway over an  
                                 intersecting feature, this  
                                 bridge is one of the more  
                                 simply detailed structures.

Project Information:          An evaluation report in 1987  
                                 recommended replacement of the  
                                 structure, which the State  
                                 Historic Preservation Office  
                                 deemed would constitute an  
                                 adverse effect. This documen-  
                                 tation was undertaken in April  
                                 1991 to mitigate that effect.

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Description of Setting and General Characteristics

The bridge carrying the Merritt Parkway (Connecticut Route 15) over the Pequonnock River in Trumbull, Connecticut, is a two-span reinforced-concrete beam structure built in 1935. The spans are each 30' long and the overall length is 68'. At the bridge (which is designated as Bridge Number 752 by the Connecticut Department of Transportation) the Merritt Parkway is a divided highway with a 28'-wide roadway in each direction, a guardrail median divider, and a 2'-wide shoulder on each side; there are no sidewalks. The bridge provides a clearance of approximately 4' over the river.

The bridge stands about five miles west of the Housatonic River. The parkway is relatively straight at this location, and runs approximately northeast-southwest. The area immediately surrounding the bridge is largely unbuilt upon, although one-quarter mile to the east is a densely developed commercial corridor along White Plains Road, which crosses over the Merritt. The dense shrubbery along the parkway makes an effective visual separation between the parkway and its environs. One-tenth of a mile to the west of this bridge is a plate-girder span carrying an abandoned street railway right-of-way over the Merritt Parkway.

The Merritt Parkway, built in 1934-1940, is a limited-access highway and designed landscape traversing Fairfield County, Connecticut. It runs 37.5 miles between the New York state border (town of Greenwich, Connecticut) and the west bank of the Housatonic River (town of Stratford). Widely hailed since its construction as a masterpiece of parkway design (see Historical and Design Context, below), the Merritt Parkway is characterized by the designers' comprehensive effort to adapt the alignment to its physical setting, and to create a picturesque appearance through sensitive structural and landscape design. Though the roadway does not strictly follow the terrain, it does rise, fall, and curve with the hills

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it crosses. Originally, grass shoulders sloped upward to the level of the surrounding terrain, where they were edged with native shrubs and trees; much of this landscape design is extant.

The bridges are the most prominent and celebrated features of the Merritt Parkway. Concrete is the principal structural and decorative material for the bridges; only three bridges employ steel for major structural components (other than reinforcing bar), and another three feature steel railings or other decorative elements.

This bridge is one of the original thirty-six spans that carried the Merritt over streams and local roads; another thirty-five bridges carried local roads over the Merritt. The bridges in the latter group, which are more prominent parts of the designed landscape, generally have a greater degree of applied ornamental detail. Particularly on bridges that crossed rivers and streams, such as this one, the decorative finishes on the bridges that carry the Merritt over other features are frequently limited to the railing or parapet, the elements that are most visible from the parkway.

Structure and Decorative Treatments of the Bridge

The two abutments and the pier between spans consist of reinforced concrete. These substructural elements are angled approximately 30 degrees to the axial line of the roadway, reflecting the skew of the crossing. Each abutment features short side walls, 12 to 14' long, at the ends. The side walls, which rest on footings 9' wide by 2.5' thick, taper in thickness from 6'-9" at the base to 3' at a point just below the level of the roadway. The abutments themselves are 69'-6" wide; they rest on similar footings and taper in thickness from 5' at the base to 2' where they support the ends of the beams. The center pier (77'-6" by 3'-4" at the base) has its upstream end tapered to a blunt point in order to deflect ice and debris.

The principal load-bearing component of each span is

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a system of nine concrete beams (parallel to the roadway), integrally reinforced and poured with the concrete deck. The beams are 2' wide and are set 7'-3" apart (center-to-center distance). They have a uniform depth of 1'-8" to the bevels that mark their junction with the roadway slab; the entire system is crowned 6" across the width of the roadway for drainage. The concrete slab is 7 1/2" thick, topped originally by a concrete wearing surface that was 2" thick; after 55 years of wear and renewal, as well as localized repair, the present bituminous surface features varying thicknesses.

The railing is supported on a 2'-7" wide bracket that is cantilevered from the outside beams on each side of the roadway. A 1'-6" high curb rises from the level of the roadway, surmounted by the 2'-3" high railing. The railing, which displays a vaguely Neo-Classical influence, is the only decorative feature of the bridge. It features sections of six square balusters with beveled corners set between larger beveled-corner piers.

The bridge retains all of its historic features, although moisture penetration has caused corrosion of the reinforcing steel, numerous cracks, and widespread spalling, particularly of the beams projecting from the underside of the structure.

#### Historical and Design Context

The Merritt Parkway was the culmination of several trends in Fairfield County transportation that extended a generation or more into the past. It was the first attempt to bypass the road that ran along the coast of Long Island Sound (known as Post Road or Kings Highway, and later as U.S. Route 1). Since the early national period, Post Road had served as the gateway between New York and New England. Commercial and industrial growth in the 19th century increased the use of this road, but at a time when most freight moved on the railroad, the condition of the road was not a major concern beyond the local communities through which it passed. Automotive transport

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elevated the demands placed on the road; its small size, the densely built up commercial and residential surroundings, and the growing volume of through traffic combined to render Post Road unfit by the 1920s. Warren Creamer, who served as the State Highway Department's Project Engineer in constructing the Merritt Parkway, later described the situation the Parkway was intended to alleviate:

It is certain that many of you have occasion to use the Post Road; have doubtless in your journey from Bridgeport to New York City been confronted by an amazing succession of traffic lights . . . have passed through the city and town streets . . . ultimately arriving in the city, nerves on edge and facing exhaustion. (Creamer, p. 99)

In 1925 Connecticut Governor John H. Trumbull authorized the planning of a "Parallel Post Road." The enormity of the project was further complicated by difficulties attending land acquisition and in negotiating cost-sharing among the county, state and federal governments. In 1931, Governor Wilbur Cross created a new commission to oversee the project, and appointed as its chair Schuyler Merritt, who in his former role as U.S. Representative from Fairfield County had been instrumental in obtaining federal funds. In the end, the parkway was paid for with \$6 million from the New Deal's Public Works Administration, \$1 million from the state, and \$15 million from bonds issued by the county.

The Highway Department design team included Creamer; Leslie Sumner, chief structural engineer; A. Earl Wood, engineer of roadside development; W. Thayer Chase, landscape architect; and architect George Dunkelberger, Staff Resident Designer, who specified all the finishes for the bridges. Dunkelberger, a native of Camden, New Jersey, studied at Philadelphia's Drexel Institute before working in that city and later in Hartford as a draftsman and estimator in several architectural offices. During the 1920s he had a partnership in Hartford with Joseph Gelman before joining the Highway Department. According to Wood, the team traveled throughout the

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northeast to make a comprehensive study of parkways, and "intended to build in Fairfield County a parkway to surpass them all." (National Register of Historic Places Registration Form, p. 8-5)

The most immediate precedent for the Merritt Parkway was the system of landscaped roads in adjacent Westchester County, New York. The first, the Bronx River Parkway, opened in 1923, followed in the next ten years by the Saw Mill, Hutchinson, Briarcliff-Peekskill and Cross-County parkways. The Connecticut team also drew from the codification of parkway principles prepared by the National Park Service in connection with the construction of parkways in the National Capitol Region, for which planning had begun in 1913. The Park Service defined the key requirements for a parkway: prohibition of commercial vehicles; prohibition of unsightly roadside development and signage; wider than average rights-of-way to buffer the roadway from adjacent properties; no granting of frontage or access rights; preference of a new site to avoid congested areas; providing maximum access to surrounding vistas; using grade separations (bridges) instead of grade crossings (intersections); and well-distanced entrances and exits to reduce traffic interruption.

The success of the Merritt Parkway owed much to the adaptation of these principles for a road serving general transportation needs rather than as a connecting link among parks, and it became a model for highway design in the years immediately following its completion. Lawrence Ivy Hughes used the Merritt Parkway as an example of the "modern four-lane highway" in his influential 1942 book, American Highway Practice. In 1941, the Yale University Bureau for Street Traffic Research began to employ a detailed comparison between the Post Road and the Merritt Parkway as a case study to teach principles of highway engineering. In his book, Space, Time and Architecture, the architectural critic Sigfried Giedion described the Merritt Parkway as "a masterpiece of organic layout exemplifying the arrangement of the parkway -- adaptation of the roadbed to the structure of the country, careful alignment of the traffic



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lanes, separation of vehicular from all pedestrian traffic, and overpasses at junctions." Norman Bel Geddes, the planner and architect who designed General Motors's Futurama Exhibition at the New York World's Fair of 1939, praised the Merritt Parkway as one of "highways today that strike us as excellent" in his 1940 book, Magic Motorways.

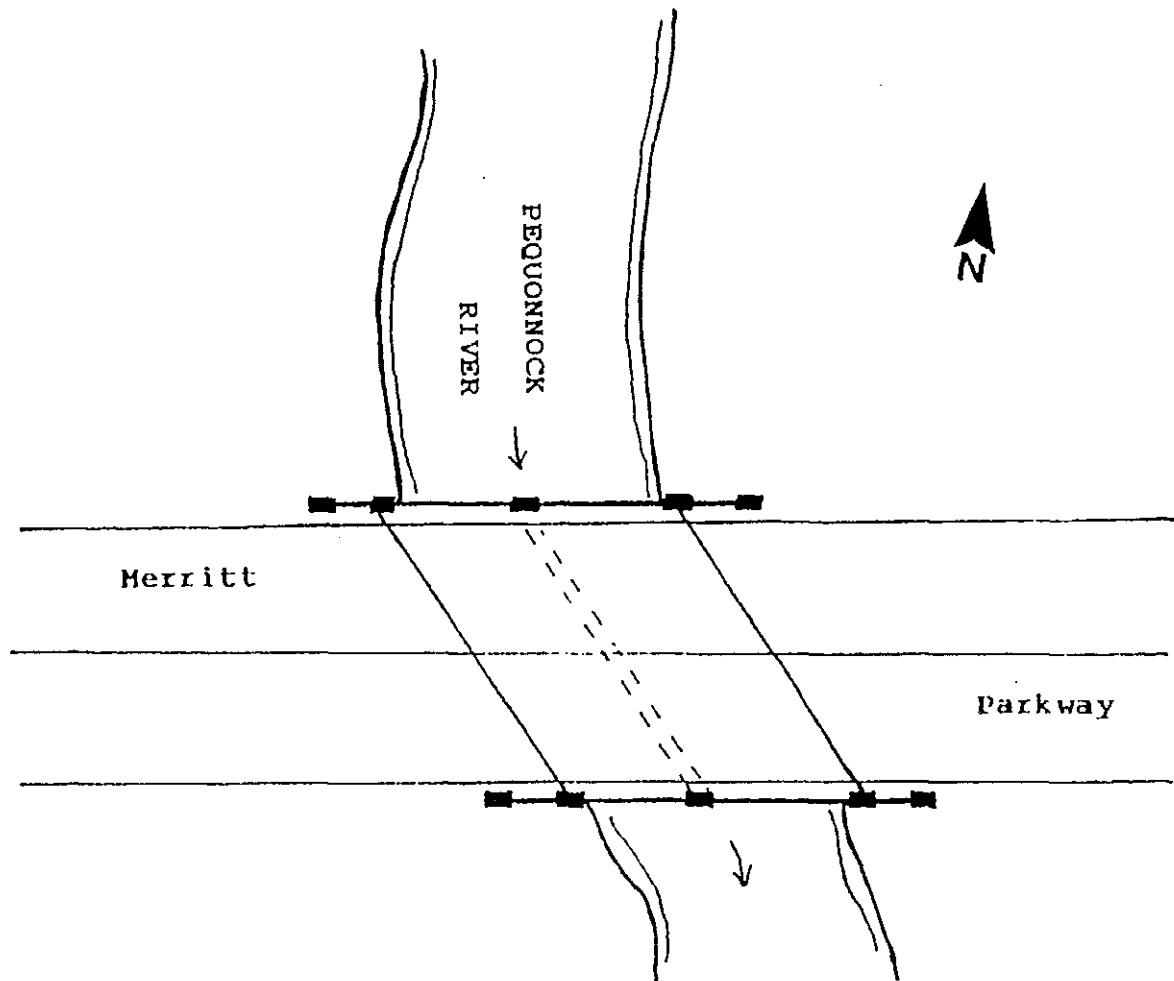
Despite such praise, however, the design principles embodied in the Merritt Parkway were superceded immediately after World War II. Engineered for a maximum speed of 45 miles per hour, the parkway could not accommodate the demand for high-speed motoring that overtook the desirability of scenic motoring. The interstate highway system that has been the centerpiece of modern vehicular-transportation development has employed the utilitarian design precedents of the German autobahn.

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Trumbull

Fairfield County, CT

0 50 feet

Sketch Map